WorkshopBrief

FMCSA

Federal Motor Carrier Safety Administration

FMCSA Research and Technology Workshop—January 2001

Introduction

The Federal Motor Carrier Safety Administration (FMCSA), established January 1, 2000 within the U.S. Department of Transportation, focuses on efforts to improve Federal motor carrier safety programs and to reduce the number and severity of commercial vehicle-related crashes on our Nation's highways. The Agency's safety goal is to reduce the number of deaths and injuries resulting from truck and bus crashes by 50 percent by 2010. FMCSA's Office of Research and Technology provides critical support to efforts to meet this objective.

On January 11, 2001, the Office of Research and Technology sponsored its first workshop at the annual meeting of the Transportation Research Board, a unit of the National Academy of Sciences. The half-day session was held at the Omni Shoreham Hotel in Washington, DC.

The workshop gave FMCSA staff the opportunity to get feedback from interested parties on the direction of the Research and Technology Program. More than 130 people attended, including representatives of the Federal Government, State governments, universities, safety advocacy groups, truck and bus associations, and technology and manufacturing companies.

This document provides an overview of that workshop and presents a sampling of the many comments, suggestions, and observations offered by participants regarding the role of research and technology in promoting truck and bus safety.

Purpose

The purpose of the workshop was to allow FMCSA's Office of Research and Technology to solicit feedback from interested parties on the structure and direction of its program. By working with Federal officials, State governments, safety advocacy groups, truck and bus associations, the university community, and other invaluable contributors, the Office strives to achieve the common goal of safe commercial vehicle transportation.

Structure

The workshop began with a plenary session featuring an overview of the Agency, its Research and Technology Program, and the objectives of the workshop by key FMCSA

management officials. Participants then divided into breakout groups, based on five focus areas:

1. Problem Assessment;
2. Policy, Safety Management, and Outreach;
3. Drivers' Qualifications and Safety Performance;
4. Truck and Bus Vehicle Safety Performance; and
5. Compliance, Enforcement, and Operations.

In each group, FMCSA staff gave an overview of Agency initiatives related to the focus area, then invited participants to express their comments and suggestions. The group discussions were recorded without attribution to specific individuals, and participants completed anonymous feedback forms at the end of the sessions. Following the breakout meetings, attendees reconvened to hear FMCSA staff present brief summary reports from each breakout group.

Participant Feedback

Discussion in the breakout sessions was lively, and the different groups addressed many of the same research and technology topics. The following section provides a representative sample of participants' suggestions across all breakout groups. It is intended as an overview of the major topics discussed at the workshop, not as a complete summary of all partici-pants' comments.

Collect quality data.
The FMCSA should continue and pursue aggressively the crash causation study. The Agency should develop a useful crash database of fatalities, injuries, and property-damage-only events, including contributing factors. The database should be reliable, timely, and focused on crash causation. Existing data should be improved and expanded, possibly by using insurance industry data or cameras mounted at critical points in roads. The FMCSA should establish the relationship between crashes and enforcement, and examine changing factors used in carrier safety assessment.

Collect relational data.
The FMCSA should examine crash data by road and vehicle types. The Agency should improve and expand data on motor carriers, farm trucks, truck types across carriers, number of truck drivers, and number of crashes. It should investigate the significance of

passenger vehicle data, such as the percentage of crashes caused by commercial versus non-commercial drivers. Driver citation and conviction data should be linked to help identify carriers based on the characteristics of their drivers. However, trust must be established among stakeholders to collect good data from carriers.

Collect and analyze "near miss" reports.
The FMCSA should validate, through research and demonstration, "near miss" reporting and data classification for motor carriers and private vehicles, using a consistent definition of "near miss." To obtain more detail on these incidents, as well as on crashes, researchers should consider collecting data in instrumented vehicles using "black boxes." The Agency should realize that trust between the regulated and the regulator is essential to obtain data, and there are tradeoffs between the acquisition of quality data and the legal issues of privacy and liability. Reporting methods should be confidential because "black boxes" might intimidate drivers.

Improve crash database.
The FMCSA should expand crash investigation over a larger sample of truck crashes, perhaps by using an investigative program similar to the National Transportation Safety Board's "packed suitcases" program.

Use data effectively for analysis and forecasting.
The FMCSA should determine the causes of most crashes and focus its analysis activities on the biggest problems that have the greatest potential for near-term solutions. The Agency should use the data it has now to create more accurate statistics. It should link its data to companies' safety programs and other contributing factors. Joint labor-management investigations focusing on a root cause should be encouraged. FMCSA should give a high priority to analyzing how the increasing volume of truck traffic, dedicated bus lanes, and intermodal corridors affect existing and future infrastructure and truck and bus crashes.

Because commercial drivers are part of the industrial process, the Agency must understand how the whole industrial system works and its underlying economic

forces. For example, the incentives for carriers and drivers to trade safety for productivity need to be taken into account. The FMCSA should investigate the causal relationships among: enforcement, fatigue, and workload; enforcement and crashes; roadway, driver, and vehicle; and physical environment and physiological factors. The Agency should have the capability to show how absolute reductions in numerical quantities translate into projected injury and death rates.

Continue behavioral research.

The FMCSA should focus its efforts on improving driver selection, training, and performance. Significant research possibilities in this area include: fatigue and drowsiness forecasting tools, individual differences in fatigue susceptibility, driver visibility, situation awareness and driver distraction, driver inattention and workload, driver physical qualifications, and safe driver profiles.

Study driver education, training, and outreach.

The FMCSA should evaluate existing driver education and outreach programs, particularly exploring ways to measure driver performance to pinpoint areas for remedial training. Lessons learned from the use of successful training models would help strengthen the Research and Technology Program. The Agency should develop and validate national standards for driver training for both entry-level and experienced drivers. The FMCSA should examine driver retention issues, and explore innovative ways for the Federal Government to recognize successful commercial drivers. The Agency should build an evaluation component into every education and training program.

Take a macro view.

The FMCSA should focus on ways to create and foster a culture of safety. The Agency should establish tactics to reach safety goals rather than looking at technologies that support tactics. The FMCSA should explore organizational factors that affect work-rest cycles, the uniformity and consistency among state regulations, and the possibility of looking at motor vehicle crashes as a public health issue.

Study and evaluate countermeasures.

The FMCSA should give priority to the identification and evaluation of existing and potential safety countermeasures. The Agency needs a reliable system to evaluate alternative safety countermeasures and a cost/countermeasures matrix that compares expected benefits to targeted investments.

Examine safety management practices.

The FMCSA should examine the economic incentives that force commercial drivers to drive overweight trucks, exceed speed limits, and violate rules, and assess how these factors contribute to crashes. The Agency needs input from shippers and private fleets to fully understand these issues. Intermodal cooperative efforts, and incentives for safe vehicle operation should be explored. The FMCSA needs ways to better equip state and federal inspectors to inspect hazardous vehicles and cargo tanks. The Agency should develop programs to increase public awareness of the limitations and dangers of large truck/passenger vehicle interaction, and explore how to influence the driving behavior of non-commercial drivers. The FMCSA should evaluate the effectiveness of safety programs, regulations, and outreach activities. It should give priority to mandatory electronic recorders for hours-of-service compliance.

Focus on commercial-driver-centered technologies.

The FMCSA should highlight driver-centered technologies, including those that monitor driver performance and those that enhance drivers' awareness of a situation.

Examine vehicle technologies.

The FMCSA should use instrumented vehicles to gain greater insight into crash causation. The Agency should fund systems and integration strategies to adopt the use of new technologies. Its partnership with NHTSA on collision avoidance systems should be continued. Other vehicle technologies that should be considered are those that:
- enhance visibility,
- improve acceleration/stopping performance,
- enhance static roll stability,
- reduce blind zones around vehicles,
- monitor drowsy drivers,
- identify and eliminate fatigue,
- eliminate the need for on-road inspections,
- improve braking handling stability, and
- simplify brake maintenance.

"Buy into" new technologies.

The FMCSA should provide incentives for motor carriers to incorporate safety technology. The Agency needs to demonstrate valid and convincing data on the benefits of a technology before it is promoted. The FMCSA's programs should address the traditional mechanical engineering aspects of vehicle design and configuration, all of which affect driving and safety performance. All classes of vehicles should be examined, including motorcoaches and school buses.

Model and study the infrastructure and its functioning.

The FMCSA should make safety-related infrastructure improvements a high priority. Studies should assess the relationship among ramp speed conditions, turning radius, and hazardous materials crashes. Work zones, signage, traffic density, and other infrastructure characteristics should be modeled. The Agency needs a comprehensive program that considers the integration of enforcement; engineering; and education of drivers, carriers, suppliers, and highway agencies. The trucking community should be educated and engaged in a cooperative effort to improve compliance. The privatization of public rest areas should be avoided.

FMCSA Action

FMCSA's Office of Research and Technology appreciates the insightful feedback from workshop participants on the structure and direction of its program. We will endeavor to incorporate feedback into our research and technology decision-making process. The FMCSA's Web site *(www.fmcsa.dot.gov)* also gives you access to detailed information on what we are doing and future plans. More information about the current Research and Technology program will be provided at the 2002 workshop.

U.S. Department of Transportation
Federal Motor Carrier Safety Administration

November 2001